

AMENDMENT AND RESPONSE

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Serial No.: 09/727,246

Filing Date: November 30, 2000

Attorney Docket No. 100.142US01

Title: CLOCK RECOVERY MECHANISM

REMARKS

Applicant has reviewed the Office Action mailed on May 26, 2004, as well as the art cited. Claim 8 has been amended to correct an antecedent basis issue. No new matter has been added. Claims 1-30 are currently pending in this application.

Rejections Under 35 U.S.C. § 112

Claim 8 was rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention. In particular, the Examiner stated that claim 8 recites the limitation "the received data" in line 2 and there is insufficient antecedent basis for this limitation in the claim. Claim 8 has been amended to remove the antecedent basis issue. Applicant requests withdrawal of this rejection.

Rejections Under 35 U.S.C. § 102

Claims 1, 13, 14 and 21 were rejected under 35 USC § 102(e) as being anticipated by Takla, (U.S. Patent No. 6,044,123). Applicant respectfully traverses this rejection.

Claim 1

Claim 1 is directed to a method for providing a seed frequency for a receive clock. The method includes estimating a frequency of an incoming clock signal, embedding the estimated frequency into a transmitted data stream, capturing the embedded estimated frequency and seeding a control loop of the receive clock with the estimated frequency.

The Examiner asserts that Takla teaches "estimating a frequency ... into a transmitted data stream" (Abstract; Col.1, lines 30-31; Col. 2, lines 16-19; Col. 3, lines 66-67) (where the frequency of the clock embedded in the data signal is predetermined); "capturing the embedded ... estimated frequency" (Abstract; Col. 1, line 40-44; Col. 4, line 4 to Col. 7, line 42).

Applicant has reviewed Takla and finds that Takla does not teach or suggest the method for providing a seed frequency for a receive clock as found in claim 1. In particular, Takla does not teach or suggest estimating a frequency of an incoming clock signal as found in claim 1. There is no discussion in Takla of estimating a frequency of an incoming clock signal. In contrast, Takla discusses, with respect to Figure 1, "clock signal information associated with data

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114 is embedded in the data signal 114" and Figure 2 "In Fig. 2, a data signal 214 includes embedded clock signal information. This clock signal information reflects the clock signal with which the data signal 214 is clocked from." Therefore Takla does not teach or suggest embedding *the estimated frequency* into a transmitted data stream, capturing the embedded *estimated frequency* and seeding a control loop of the receive clock with *the estimated frequency*. Further, Takla does not teach or suggest seeding a control loop of the receive clock with the estimated frequency as found in claim 1. As a result, Takla does not anticipate claim 1 and claim 1 should be allowed.

Claims 2-8 depend from and further define allowable claim 1 and should be allowed for at least the reasons provided above with respect to claim 1.

Claim 13

Claim 13 is directed to a method for seeding a frequency of a receive clock. The method includes creating an estimate of a frequency of an incoming clock signal, embedding the estimate in a data stream to be sent to the receive clock, recovering the embedded estimate from the data stream, decoding the estimate and setting an initial phase locked loop range according to the decoded estimate.

The Examiner relies on his assertions with respect to claim 1 and adds that "further, Takla teaches "decoding ... decoded estimate" in Col. 2, line 63 to Col. 3, line 34." Applicant refers the Examiner to the arguments presented above with respect to claim 1 and further that Takla does not teach or suggest decoding the *estimate* and setting an initial phase locked loop range according to the decoded *estimate*. As a result, Takla does not anticipate claim 13 and claim 13 should be allowed.

Claim 14

Claim 14 is directed to a method for adaptively clocking a telecommunications system. The method includes estimating a frequency of an incoming data stream, encoding the estimate of the frequency into network traffic, decoding the estimate at a receive end of the system and seeding the receive end clock with the frequency estimate.

The Examiner relies on his assertions with respect to claim 1. Applicant refers the Examiner to the arguments presented above with respect to claim 1. As a result, Takla does not anticipate claim 14 and claim 14 should also be allowed.

Claim 21

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Claim 21 is directed to a logic module. The module includes a clock control module to receive a data signal and a clock signal and a data control module connected to the clock control module to coordinate data flow and to generate a control signal for a receive end.

The Examiner asserts that Takla teaches all the claimed subject matter "a clock control ... receive end" in Figure 2. The Examiner has not indicated what aspects of Figure 2 refer to the limitations of claim 21. Applicant has not found a clock control module and a data control module to generate a control signal for a receive end as found in claim 21. As a result, Takla does not teach or suggest the logic module of claim 21 and claim 21 should be allowed.

Claim 15 was rejected under 35 USC § 102(e) as being anticipated by Van der Putten et al., (U.S. Patent No. 6,072,810). Applicant respectfully traverses this rejection.

Claim 15

Claim 15 is directed to a telecommunications system. The system includes a transmit end with an incoming data frequency estimator, a receive end with an estimate recovery module and a data path therebetween for transmitting data and a frequency estimate of the data.

The Examiner asserts that Van der Putten teaches all of the claimed subject matter "a transmit end ... data" in Figure 1. Applicant has reviewed Van der Putten and does not find that Van der Putten teaches or suggest an incoming data frequency estimator, an estimate recovery module or a data path therebetween for transmitting a frequency estimate of the data as found in claim 15. As a result, Van der Putten does not teach or suggest the system of claim 15 and claim 15 should be allowed.

Rejections Under 35 U.S.C. § 103

Claims 3-8, 19, 20, 22-24 and 26-30 were rejected under 35 USC § 103(a) as being unpatentable over Takla (U.S. Patent No. 6,044,123). Applicant respectfully traverses this rejection.

Claims 3-8 depend from and further define allowable claim 1 and for at least the reasons provided above should also be allowed. Applicant respectfully traverses the Examiner's assertion that the limitations of claims 3-8 would have been optional for one skilled in the art. Since the Applicant believes claims 3-8 are allowable for at least the above reasons, Applicant may not have put forth responses to additional rejections to said claims at this time. However,

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the Applicant reserves the right to address said additional rejections to said claims if a further response is required.

Claim 19

Claim 19 is directed to a transmitter. The transmitter includes a protocol interface module to receive a data input, a frequency estimator connected to the protocol interface module, an encoder connected to the frequency estimator and to the protocol interface to encode data and a frequency estimate into a network data stream and interface logic to transmit the data stream.

The Examiner relies on his assertions with respect to claim 1 and further asserts that "a protocol interface" would have been obvious to one skilled in the art. Applicant does not find that "a protocol interface to encode data and a frequency estimate into a network data stream and interface" as found in claim 19 is obvious. Applicant respectfully traverses the Examiner's assertion and requests that the Examiner cite a reference in support of his position in accordance with MPEP § 2144.03. Further, Applicant refers the Examiner to the arguments presented above with respect to claim 1.

Claim 20 depends from and further defines allowable claim 19 and for at least the reasons provided above should also be allowed. Since the Applicant believes, claim 19 is allowable for at least the above reasons Applicant may not have put forth responses to additional rejections to said claims at this time. However, the Applicant reserves the right to address said additional rejections to said claims if a further response is required.

Claims 22-24 depend from and further define allowable claim 21. Since the Applicant believes, claims 22-24 are allowable for at least the above reasons Applicant may not have put forth responses to additional rejections to said claims at this time. However, the Applicant reserves the right to address said additional rejections to said claims if a further response is required.

Claims 26-28 depend from and further define allowable claim 25. Since the Applicant believes, claims 26-28 are allowable for at least the above reasons and below Applicant may not have put forth responses to additional rejections to said claims at this time. However, the Applicant reserves the right to address said additional rejections to said claims if a further response is required.

Claim 29

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Claim 29 is directed to a receiver. The receiver includes a protocol interface module to receive network traffic containing an embedded frequency estimate, asynchronous transfer mode (ATM) logic connected to the protocol interface module to recover embedded frequency estimate data from the network traffic, a buffer connected to the ATM logic to receive the data and determination logic to receive the estimation data and to recover the frequency estimate.

Claims 16-18 and 25 were rejected under 35 USC § 103(a) as being unpatentable over Van der Putten et al., (U.S. Patent No. 6,072,810). Applicant respectfully traverses this rejection.

The Examiner has provided no basis for his rejection of claims 16-18, 25 and 29-30 other than the claimed subject matter would have been "obviously obvious" to one skilled in the art. Applicant respectfully traverses this and requests that the Examiner cite a reference in support of his position with respect to claims 16-18, 25 and 29-30 in accordance with MPEP § 2144.03.

Further Claims 16-17 depend from and further define allowable claim 15. Since the Applicant believes, claims 16-17 are allowable for at least the above reasons Applicant may not have put forth responses to additional rejections to said claims at this time. However, the Applicant reserves the right to address said additional rejections to said claims if a further response is required.

Claim 2 was rejected under 35 USC § 103(a) as being unpatentable over Takla, (U.S. Patent No. 6,044,123) in view of Guo (U.S. Patent No. 5,400,370). Applicant respectfully traverses this rejection.

Claim 2 depends from allowable claim 1. Since the Applicant believes, claim 1 is allowable for at least the above reasons. Applicant may not have put forth responses to additional rejections to said claims at this time. However, the Applicant reserves the right to address said additional rejections to said claims if a further response is required.

Claims 9-12 were rejected under 35 USC § 103(a) as being unpatentable over Guo (U.S. Patent No. 5,400,370) in view of Van der Putten et al., (U.S. Patent No. 6,072,810). Applicant respectfully traverses this rejection.

Claim 9

Claim 9 is directed to a method of recovering a clock signal for a buffer. The method includes buffering incoming data in a buffer, formulating a frequency estimate based on a data rate of the incoming data, providing the frequency estimate and the incoming data to an asynchronous transfer mode (ATM) segmentation and reassembly sublayer, encoding the

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frequency estimate into ATM traffic, sending the ATM traffic to a receiver and seeding a frequency lock algorithm with the estimate.

The Examiner asserts that "Guo teaches all of the claimed subject matter in claim 9 in Col. 1, line 42 to Col. 5, line 7; Col. 6, line 3 to Col. 8, line 53, except for the claimed subject matter "ATM." However, serial data with embedded clock therein used in ATM environment is known in the art (Van, Col. 1, line 17-43). Thus, the claimed subject construction of ATM communication, as claimed, would have been obvious to Guo in view of Van."

35 U.S.C. § 103 provides in relevant part:

Conditions for patentability; non-obvious subject matter.

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

To establish a case of *prima facie* obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based in the applicant's disclosure. *In re vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir 1991). MPEP § 2143 - § 2143.03.

First as stated by the Examiner neither Guo nor Van der Putten teach or suggest the method of claim 9. The Applicant asserts that the references alone or in combination do not teach or suggest the method of claim 9. The Examiner has not established a *prima facie* case for obviousness. The Examiner has provided no suggestion or motivation in either references or in the knowledge generally available to one of ordinary skill in the art to modify the Guo or to combine the references. The assertion by the Examiner "that serial data with embedded clock therein used in ATM environment is known in the art" does not satisfy this requirement nor are

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the limitations of providing the frequency estimate and the incoming data to an asynchronous transfer mode (ATM) segmentation and reassembly sublayer, encoding the frequency estimate into ATM traffic, sending the ATM traffic to a receiver and seeding a frequency lock algorithm with the estimate taught or suggested by Guo or Van der Putten. Further the Applicant asserts that references do not teach or suggest the method of recovering a clock signal for a buffer as found in claim 9. In particular, the references alone or in combination do not teach or suggest buffering incoming data in a buffer, formulating a frequency estimate based on a data rate of the incoming data, providing the frequency estimate and the incoming data to an asynchronous transfer mode (ATM) segmentation and reassembly sublayer, encoding the frequency estimate into ATM traffic, sending the ATM traffic to a receiver and seeding a frequency lock algorithm with the estimate as found in claim 9. There is no discussion in the references of formulating a frequency estimate based on a data rate of the incoming data in a buffer as found in claim 9 and further formulating a frequency estimate based on a data rate of the incoming data. The Examiner has failed to establish a prima facie case of obviousness and therefore claim 9 should be allowed.

Claims 10-12 depend from and further define allowable claim 9. Since the Applicant believes, claims 10-12 are allowable for at least the above reasons. Applicant may not have put forth responses to additional rejections to said claims at this time. However, the Applicant reserves the right to address said additional rejections to said claims if a further response is required.

Reservation of Right

Applicant expressly reserves the right to swear behind any reference cited by the Examiner under 35 U.S.C. §102(e)/103. Any statements regarding these references are not an admission that the references are prior art.

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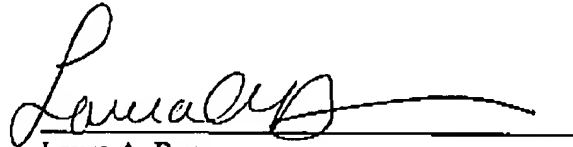
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CONCLUSION

Applicant respectfully submits that claims 1-30 are in condition for allowance and notification to that effect is earnestly requested. If necessary, please charge any additional fees or credit overpayments to Deposit Account No. 502432.

If the Examiner has any questions or concerns regarding this application, please contact the undersigned at (612) 332-4720.

Respectfully submitted,

Date: 26 August 2004

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